



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human Profiling-1 Protein  
**Catalog Number:** hRP-1303  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human profiling 1 (PFN1) gene encodes a member of the profilin family of small actin-binding proteins. The encoded protein plays an important role in actin dynamics by regulating actin polymerization in response to extracellular signals. By binding to PIP2, PFN1 inhibits the formation of IP3 and DG. It also inhibits androgen receptor (AR) and HTT aggregation and binding of G-actin is essential for its inhibition of AR. Deletion of this gene is associated with Miller-Dieker syndrome, and the encoded protein may also play a role in Huntington disease. Recent data indicated that by regulating phosphorylation of profiling at Tyr 129 in endothelial cells, PFN1 could specific interacts with VHL to control HIF-1a degradation, which induces expression of multiple angiogenic factors production in tumor vascular microenvironment development.

Full-length human PFN1 cDNA (2 – 140 aa) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

**Gene Symbol:** PFN1 (ALS18)  
**Accession Number:** NP\_003671.1  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Sucrose.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.



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## Key References

Yi Fan, et al., *Profiling-1 phosphorylation directs angiocrine expression and glioblastoma progression through HIF-1a accumulation*. Nature Cell Biology. published online 20 April. DOI: 10.1038/ncb2954 (2014).

Yang S, et al., *Mutation analysis and immunopathological studies of PFN1 in familial and sporadic amyotrophic lateral sclerosis*. Neurobiol. Aging 34 (9), 2235 (2013)

Liu H, et al., *Expression and regulatory function of miRNA-182 in triple-negative breast cancer cells through its targeting of profilin 1*. Tumour Biol. 34 (3), 1713-1722 (2013)

Shao J, et al., *Phosphorylation of profilin by ROCK1 regulates polyglutamine aggregation*. Mol. Cell. Biol. 28 (17), 5196-5208 (2008)

## Applications

1. May be used for in vitro PFN1 protein mediated VHL-HIF1a pathway regulation study in tumor vascular microenvironment development with “ProFectin” based intracellular delivery of this protein.
2. May be used for PFN1 protein – protein interaction assay.
3. Enzymatic substrate for various proteases.
4. Potential cancer diagnostic biomarker for AR negative related breast cancer.
5. May be used for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFAGWNAYIDNLMADGTCQDAAIVGYKDSPSVWAAVP  
GKTFVNIITPAEVGVLVGKDRSSFYVNGLTLGGQKCSVIRDSLQDGEFSMDLRTKSTGGAPTFN  
VTVTKTDKTLVLLMGKEGVHGGLINKKCYEMASHLRRSQY